# Material Safety Data Sheet

Printing date 10/21/2008 Version 5 Reviewed on 10/21/2008

## 1 Identification of substance

· **Product details**

· **Trade name: Oxygen**

· **Article number:** 124-01-0006

· **Creation date:** 06/13/2008

· **Manufacturer/Supplier:**

Linde Canada Limited
5860 Chedworth Way
Mississauga, Ontario L5R 0A2
Telephone (905) 501-1700
24-HOUR EMERGENCY TELEPHONE NUMBER:
(905) 501-0802

Linde .
575 Mountain Avenue .
Murray Hill, NJ 07974 .
Telephone (908) 464-8100 .
24-HOUR EMERGENCY TELEPHONE NUMBER:
CHEMTREC (800) 424-9300 .

· **Information department:** Customer Service Centre: 1-866-385-5349

## 2 Composition/Data on components

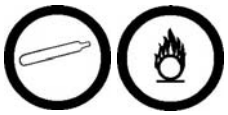
· **Chemical characterization:**
· **CAS No. Description**
7782-44-7 Oxygen
· **Identification number(s)**
· **EINECS Number:** 231-956-9
008-001-00-8

## 3 Hazards identification

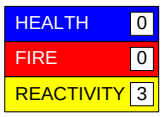
· **Hazard description:**

Oxidizing

· **WHMIS-symbols:**
A - Compressed gas
C - Oxidizing materials



· **HMIS-ratings (scale 0 - 4)**




Health = 0
Fire = 0
Reactivity = 3

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· **NFPA ratings (scale 0 - 4)**

Health = 0
Fire = 0
Reactivity = 3

· **Information pertaining to particular dangers for man and environment:**
Contact with combustible material may cause fire.
· **Classification system:**
The classification is in line with internationally approved calculation standards. It is expanded, however, by information from technical literature and by information furnished by supplier companies.
· **GHS label elements**

**Danger**

2.4/1 - May cause or intensify fire; oxidizer.
· **Prevention:**
Keep/Store away from clothing/combustible materials.
Keep reduction valves free from grease and oil.
· **Response:**
In case of fire: Stop leak if safe to do so.
· **Storage:**
Store in a well-ventilated place.

## 4 First aid measures

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:** Generally the product does not irritate the skin.
· **After eye contact:** Rinse opened eye for at least 15 minutes under running water. Then consult a doctor.
· **After swallowing:** Not applicable

## 5 Fire fighting measures

· **Suitable extinguishing agents:**
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Protective equipment:** Wear self-contained respiratory protective device.

## 6 Accidental release measures

· **Person-related safety precautions:**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventillation.
Eliminate ignition sources
Stop leak - ONLY if possible to do so without risk.
· **Measures for environmental protection:** Prevent seepage into sewage system, workpits and/or cellars.

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· **Measures for cleaning/collecting:** Ensure adequate ventillation.

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## 7 Handling and storage

· **Handling:**
· **Information for safe handling:**
Handle with care. Avoid jolting, friction, and impact.
Use only in well ventilated areas.
Store cylinders upright with valve protection cap in place and firmly secured to prevent falling or being knocked over.
· **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use.

· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Do not expose cylinder to temperatures higher than 50°C (122 °F)
· **Information about storage in one common storage facility:**
Store separately from cylinders containing flammables by a minimum distance of 20' or by a barrier of non-combustible material at least 5' high having a fire resistant rating of at least 30minutes.
Sources of ignition should be removed from storage area.
· **Further information about storage conditions:**
Store cylinder in a well ventilated area.
Store in accordance with local fire code and/or building code or any pertaining regulations.

## 8 Exposure controls and personal protection

· **Additional information about design of technical systems:**
Adequate local ventillation.
Safety showers and eyewash stations should be nearby.

· **Components with limit values that require monitoring at the workplace:** Not required.
· **Additional information:** The lists that were valid during the creation were used as basis.

· **Personal protective equipment:**
· **General protective and hygienic measures:**
Wash hands before breaks and at the end of work.
Protective clothing should be kept free of oil and grease.
PPE should be inspected and maintained regularly to retain it's effectiveness.
· **Breathing equipment:**
Use atmosphere-supplying respirators (e.g. supplied-air: demand, pressure-demand, or continuous-flow or self-contained breathing apparatus: demand or pressure-demand or combination supplied-air with auxiliary self-contained air supply atmosphere-supplying respirator) in case of insufficient ventilation.
· **Protection of hands:**

Protective gloves.

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· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
· **Eye protection:** Safety glasses

## 9 Physical and chemical properties

| · **General Information** | |
|---|---|
| **Form:** | Gaseous. |
| **Color:** | Colorless |
| **Odor:** | Odorless |
| · **Change in condition** | |
| **Melting point/Melting range:** | -219°C |
| **Boiling point/Boiling range:** | -182°C |
| · **Flash point:** | Not applicable. |
| · **Flammability (solid, gaseous):** | Contact with combustible material may cause fire. |
| · **Danger of explosion:** | Explosive when mixed with combustible material. |
| · **Solubility in / Miscibility with** | |
| **Water at 20°C:** | 39 g/l |

## 10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Dangerous reactions**
May react violently with reducing agents.
Violently oxidises organic substances.
May react violently with combustible substances.
· **Dangerous products of decomposition:** No dangerous decomposition products known.

## 11 Toxicological information

· **Acute toxicity:**
· **LD/LC50 values that are relevant for classification:** LC50 > 5000ppm
· **Primary irritant effect:**
· **on the skin:** No irritating effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.



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## 12 Ecological information

· **General notes:** Generally not hazardous for water.

## 13 Disposal considerations

· **Product:**
· **Recommendation:** Unused product should be returned to vendor.

· **Uncleaned packagings:**
· **Recommendation:**
Cylinder and unused product should be returned to vendor. Disposable cylinder must be disposed of in accordance with local regulations.
· **Recommended cleansing agent:** None applicable.

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## 14 Transport information

· **TDG and DOT regulations:**

| | |
|---|---|
| · **Hazard class:** | 2.2 |
| · **Identification number:** | UN1072 |
| · **Packing group:** | - |
| · **Proper shipping name (technical name):** | OXYGEN, COMPRESSED |
| · **Label** | 2.2+5.1 |
| · **Packaging group:** | - |

· **Maritime transport IMDG:**

| | |
|---|---|
| · **IMDG Class:** | 2.2 |
| · **UN Number:** | 1072 |
| · **Label** | 2.2+5.1 |
| · **Packaging group:** | - |
| · **EMS Number:** | F-C,S-W |
| · **Marine pollutant:** | No |
| · **Proper shipping name:** | OXYGEN, COMPRESSED |

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· **Air transport ICAO-TI and IATA-DGR:**

| | |
|---|---|
| · **ICAO/IATA Class:** | 2.2 |
| · **UN/ID Number:** | 1072 |
| · **Label** | 2.2+5.1 |
| · **Packaging group:** | - |
| · **Propper shipping name:** | OXYGEN, COMPRESSED |

· **UN "Model Regulation":** UN1072, OXYGEN, COMPRESSED, 2.2 (5.1)

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## 15 Regulations

· **Sara**

· **Section 355 (extremely hazardous substances):**

Substance is not listed.

· **Section 313 (Specific toxic chemical listings):**

Substance is not listed.

· **TSCA (Toxic Substances Control Act):**

Substance is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

· **Chemicals known to cause developmental toxicity:**

Substance is not listed.

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**

Substance is not listed.

· **NTP (National Toxicology Program)**

Substance is not listed.

· **TLV (Threshold Limit Value established by ACGIH)**

Substance is not listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is not listed.

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· **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

· **Canadian substance listings:**

· **Canadian Domestic Substances List (DSL)**

Substance is listed.

· **Canadian Ingredient Disclosure list (limit 0.1%)**

Substance is not listed.

· **Canadian Ingredient Disclosure list (limit 1%)**

Substance is not listed.

· **Product related hazard informations:**
The product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

· **Hazard symbols:**
Oxidizing

· **Risk phrases:**
Contact with combustible material may cause fire.

· **Safety phrases:**
Keep out of the reach of children.
Keep away from combustible material.

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## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Please refer to the section 3 for NFPA and HMIS Hazard Codes.

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· **Department issuing MSDS:**

Customer Service Centre: 1-866-385-5349
Customer Service Centre: 1-866-385-5349

· **Abbreviations and Acronyms:**
ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Service (Division of the American Chemical Society)
DOT: US Department of Transportation
EINECS: European Inventory of Existing Commercial Chemical Substances
GHS: Globally Harmonized System of Classification and Labelling of Chemicals

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HMIS: Hazardous Material Identification System
IATA: International Air Transportation Association
IATA-DGR: Dangerous Goods Regulations by the “International Air Transportation Association”
ICAO: International Civil Aviation Association
ICAO-TI: Technical Instructions by the “International Civil Aviation Organization (ICAO)
IMDG: International Marine Code for Dangerous Goods
WHIMS: Workplace Hazardous Material Information System
LC50: Lethal Concentration, 50 Percent
LD50: Lethal Dose, 50 Percent
N/A: Not Applicable